

#### 9-4: Division and the Remainder Theorem

**Warm-up:** 1. Divide  $12x^4$  by  $3x^3$ . Check your answer by substituting 5 for  $x$ .

2. Divide  $12x^4 - 6x^3$  by  $3x^3$ . Check your answer by substituting 2 for  $x$ .

3. If  $a^3 - 8a^2 + 19a - 12 = (a - 3)f(a)$ , what is  $f(a)$ ?

*Example 1:* Divide  $-2x^3 - 7x^2 + 10x - 25$  by  $x + 5$  and check your answer.

*Example 2:* Divide  $10y^4 + 7y^2 - 2y + 3$  by  $2y^2 + 3y$  and check your answer.

*Remainder Theorem:*

*Example 3:* Divide  $6x^3 + 3x^2 + 14$  by  $x + 4$  and check your answer using the Remainder Theorem.

Homework:

*“Learning is not attained by chance, it must be sought for with ardor and attended to with diligence.” - Abigail Adams*